

Recommended Configuration Maximums

NSX for vSphere 6.4.1
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This Configuration Maximums document provides the recommended configuration limits for VMware products. When you configure, deploy and operate your virtual and physical equipment, it is highly recommended you stay at or below the maximums supported by your product. The limits presented in the document are tested, recommended limits, and are fully supported by VMware.

Disclaimer: The limits can be affected by other factors, such as hardware dependencies. For more information about the supported hardware, see the appropriate hardware compatibility guide. It might not be possible to maximize all configuration settings and expect your desired outcome. To ensure that you do not exceed supported configurations for your environment, consult individual solution limits. The recommended configuration maximums do not represent the theoretical possibilities of your product.

Maximum Type	Maximum	Recommended Maximum value	Description
General : Nodes			
NSX for vSphere has a number of component nodes required for operation of the product. These include the NSX Manager, NSX Controllers and Hosts that are prepared for NSX. This section captures the configuration maximums for NSX nodes. In addition, NSX supports some vCenter objects that are discovered from vCenter inventory.			
Nodes	vCenter Systems in Single NSX Manager Deployments	1	
Nodes	vCenter Systems in Cross-vCenter Deployments	16	
Nodes	NSX Controllers	3	Only 3 controllers are supported in a production deployment of NSX for vSphere. A single controller may be used in a lab or proof-of-concept deployment but is not supported for production deployments.
Nodes	vCenter Clusters	64	
Nodes	Hosts per Cluster	64	
Nodes	Hosts per NSX Manager (Single vCenter - Transport Zone)	512	For IDFW deployments see the IDFW section.
Nodes	Hosts in Cross-vCenter Deployment	1024	For IDFW deployments see the IDFW section.
General : Edge Service Gateway			
A core component of NSX for vSphere is the Edge Service Gateway which delivers routing, loadbalancing,VPN and other features. There are several general configuration maximums which are covered in this section.			
Edge Service Gateway	Edge Service Gateways per NSX Manager	2000	The backup Edge in a High-Availability pair of Edges is not included in this maximum.
Edge Service Gateway	Interfaces	10	Includes internal, uplink, and trunk interfaces.
Edge Service Gateway	Sub-interfaces per Edge	200	
Layer 2 Networking			
NSX for vSphere offers a layer 2 overlay networking solution as well as layer 2 bridging.			
Layer 2 Networking	Logical Switches	10000	Non-universal logical switches.
Layer 2 Networking	Logical Switch Ports	20000	
Layer 2 Networking	Universal Logical Switches in a Cross-vCenter Deployment	8500	This maximum includes both universal and non-universal logical switches.
Layer 2 Networking	MAC Identifiers per Overlay Logical Switch (VNI)	2048	If this number of MAC entries is exceeded then newer MAC entries will not be added until the older MAC entries expire. This condition can lead to flooding in the logical network.
Layer 2 Networking	VXLAN-VLAN Bridging per Distributed Logical Router Instance	500	
Layer 3 Networking : DHCP			
NSX for vSphere provides a DHCP server to deliver IP addresses to DHCP clients.			
DHCP	DHCP Leases per Edge Service Gateway - Compact Edge Size	2048	

Maximum Type	Maximum	Recommended Maximum value	Description
DHCP	DHCP Leases per Edge Service Gateway - Large Edge Size	4096	
DHCP	DHCP Leases per Edge Service Gateway - Quad Large Edge Size	4096	
DHCP	DHCP Leases per Edge Service Gateway - Extra Large Edge Size	8192	
Layer 3 Networking : Distributed Logical Router			
NSX for vSphere provides an in-kernel distributed logical router.			
Distributed Logical Router	Distributed Logical Routers	1000	
Distributed Logical Router	Distributed Logical Router Interfaces per Distributed Logical Router	999	Maximum of 8 uplinks.
Distributed Logical Router	Distributed Logical Router Interfaces per ESXi Host	10000	
Distributed Logical Router	ARP Entries per Distributed Logical Router	20000	If this number of ARP entries is exceeded then newer ARP entries in the ARP table will replace older entries.
Distributed Logical Router	Routes per Distributed Logical Router	2000	Includes connected routes. Maximum 750 LSA type-1 prefixes.
Distributed Logical Router	OSPF Adjacencies per Distributed Logical Router	10	
Distributed Logical Router	BGP Neighbors per Distributed Logical Router	10	
Layer 3 Networking : Edge Service Gateway			
The NSX for vSphere Edge Service Gateway provides a number of layer 3 networking features such as static and dynamic routing.			
Edge Service Gateway	ECMP Paths	8	
Edge Service Gateway	NAT Rules per Edge Service Gateway - Compact Edge Size	2048	Includes both SNAT and DNAT rules.
Edge Service Gateway	NAT Rules per Edge Service Gateway - Large Edge Size	4096	Includes both SNAT and DNAT rules.
Edge Service Gateway	NAT Rules per Edge Service Gateway - Quad Large Edge Size	4096	Includes both SNAT and DNAT rules.
Edge Service Gateway	NAT Rules per Edge Service Gateway - Extra Large Edge Size	8192	Includes both SNAT and DNAT rules.
Edge Service Gateway	Static Routes per Edge Service Gateway	2048	Applies to all Edge sizes.
Edge Service Gateway	BGP Routes per Edge Service Gateway - Compact Edge Size	20000	
Edge Service Gateway	BGP Routes per Edge Service Gateway - Large Edge Size	50000	
Edge Service Gateway	BGP Routes per Edge Service Gateway - Quad Large Edge Size	250000	
Edge Service Gateway	BGP Routes per Edge Service Gateway - Extra Large Edge Size	250000	

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Maximum Type	Maximum	Recommended Maximum value	Description
Edge Service Gateway	BGP Neighbors per Edge Service Gateway - Compact Edge Size	10	
Edge Service Gateway	BGP Neighbors per Edge Service Gateway - Large Edge Size	20	
Edge Service Gateway	BGP Neighbors per Edge Service Gateway - Quad Large Edge Size	100	
Edge Service Gateway	BGP Neighbors per Edge Service Gateway - Extra Large Edge Size	100	
Edge Service Gateway	OSPF Routes per Edge Service Gateway - Compact Edge Size	20000	
Edge Service Gateway	OSPF Routes per Edge Service Gateway - Large Edge Size	50000	
Edge Service Gateway	OSPF Routes per Edge Service Gateway - Extra Large Edge Size	100000	
Edge Service Gateway	OSPF Routes per Edge Service Gateway - Quad Large Edge Size	100000	
Edge Service Gateway	OSPF LSA entries per Edge Service Gateway - Compact Edge Size	20000	Maximum of 750 type-1 LSA entries.
Edge Service Gateway	OSPF LSA entries per Edge Service Gateway - Large Edge Size	50000	Maximum of 750 type-1 LSA entries.
Edge Service Gateway	OSPF LSA entries per Edge Service Gateway - Quad Large Edge Size	100000	Maximum of 750 type-1 LSA entries.
Edge Service Gateway	OSPF LSA entries per Edge Service Gateway - Extra Large Edge Size	100000	Maximum of 750 type-1 LSA entries.
Edge Service Gateway	OSPF Adjacencies per Edge Service Gateway - Compact Edge Size	10	
Edge Service Gateway	OSPF Adjacencies per Edge Service Gateway - Large Edge Size	20	
Edge Service Gateway	OSPF Adjacencies per Edge Service Gateway - Quad Large Edge Size	40	
Edge Service Gateway	OSPF Adjacencies per Edge Service Gateway - Extra Large Edge Size	40	
Edge Service Gateway	OSPF Routes Redistributed per Edge Service Gateway - Compact Edge Size	2000	
Edge Service Gateway	OSPF Routes Redistributed per Edge Service Gateway - Large Edge Size	5000	
Edge Service Gateway	OSPF Routes Redistributed per Edge Service Gateway - Quad Large Edge Size	20000	
Edge Service Gateway	OSPF Routes Redistributed per Edge Service Gateway - Extra Large Edge Size	20000	

Maximum Type	Maximum	Recommended Maximum value	Description
Edge Service Gateway	Total Routes per Edge Service Gateway - Compact Edge Size	20000	
Edge Service Gateway	Total Routes per Edge Service Gateway - Large Edge Size	50000	
Edge Service Gateway	Total Routes per Edge Service Gateway - Quad Large Edge Size	250000	
Edge Service Gateway	Total Routes per Edge Service Gateway - Extra Large Edge Size	250000	
Edge Service Gateway	ARP entries per Edge Service Gateway - Compact Edge Size	1024	If exceeded then newer ARP entries in the ARP table will replace older entries.
Edge Service Gateway	ARP entries per Edge Service Gateway - Large Edge Size	2048	If exceeded then newer ARP entries in the ARP table will replace older entries.
Edge Service Gateway	ARP entries per Edge Service Gateway - Quad Large Edge Size	2048	If exceeded then newer ARP entries in the ARP table will replace older entries.
Edge Service Gateway	ARP entries per Edge Service Gateway - Extra Large Edge Size	2048	If exceeded then newer ARP entries in the ARP table will replace older entries.
Firewall : Grouping Objects			
NSX for vSphere leverages a number of objects that allow for grouping to aid in configuration of various components of the product.			
Grouping Objects	IP Sets	10000	
Grouping Objects	Security Tags	9000	
Grouping Objects	Virtual Machines per Tag	3500	
Grouping Objects	Security Groups to which a Virtual Machine can be a Member	5	
Grouping Objects	Security Groups per NSX Manager	10000	
Grouping Objects	Universal Security Groups	4000	
Grouping Objects	Universal IP Sets	4000	
Grouping Objects	Universal IP Sets per Universal Security Group	10	
Grouping Objects	Universal Security Tags	750	
Grouping Objects	Universal Security Tags per Virtual Machine	5	
Firewall : Distributed Firewall			
NSX for vSphere provides a distributed, in-kernel Host based firewall to achieve micro-segmentation of workloads at the virtual NIC level.			
Distributed Firewall	Rules per NSX Manager	100000	Can be a mix of local and universal rules.
Distributed Firewall	Rules per Host	10000	
Distributed Firewall	Rules per Virtual NIC	3500	
Distributed Firewall	Distributed Firewall Sections	10000	
Distributed Firewall	Universal Distributed Firewall Rules	24000	
Distributed Firewall	Universal Firewall Sections	500	
Distributed Firewall	Audit Log Entries	1000000	
Distributed Firewall	Flow Monitoring Data	2000000	Records over 15 days.

Maximum Type	Maximum	Recommended Maximum value	Description
Distributed Firewall	Saved Distributed Firewall Rule Configurations	100	
Firewall : Edge Service Gateway			
The NSX for vSphere Edge Service Gateway can function as a firewall in addition to the distributed firewall.			
Edge Service Gateway	Firewall Rules per Edge Service Gateway	2000	Applies to all Edge sizes.
Firewall : Network Introspection			
NSX for vSphere supports the network introspection use case in which traffic can be redirected to a third-party service for introspection of that network traffic.			
Network Introspection	Virtual Machines with Network Introspection Enabled	3500	
Network Introspection	Virtual Machines per Host with Network Introspection Enabled	125	
Network Introspection	Network Introspection Rules per NSX Manager	3500	
Network Introspection	Security Policies with Network Introspection Redirection Rules per vNIC	25	
Network Introspection	Virtual Machines per Security Group with Network Introspection Enabled	1000	
Network Introspection	Network Introspection Redirection Rules per Security Policy	10	
Network Introspection	Network Introspection Redirection Rules per Firewall Section	300	
Network Introspection	Security Groups per Security Policy with Network Introspection Redirection Rules	1000	
Load Balancing			
The NSX for vSphere Edge Service Gateway provides a load balancing service to distribute load across multiple workloads.			
Load Balancing	Load Balancer VIPs per Edge Service Gateway - Compact Edge Size	64	
Load Balancing	Load Balancer VIPs per Edge Service Gateway - Large Edge Size	64	
Load Balancing	Load Balancer VIPs per Edge Service Gateway - Quad Large Edge Size	64	
Load Balancing	Load Balancer VIPs per Edge Service Gateway - Extra Large Edge Size	1024	
Load Balancing	Load Balancer Pools per Edge Service Gateway - Compact Edge Size	64	
Load Balancing	Load Balancer Pools per Edge Service Gateway - Large Edge Size	64	
Load Balancing	Load Balancer Pools per Edge Service Gateway - Quad Large Edge Size	64	

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Maximum Type	Maximum	Recommended Maximum value	Description
Load Balancing	Load Balancer Pools per Edge Service Gateway - Extra Large Edge Size	1024	
Load Balancing	Load Balancer Servers per Pool - Compact Edge Size	32	
Load Balancing	Load Balancer Servers per Pool - Large Edge Size	32	
Load Balancing	Load Balancer Servers per Pool - Quad Large Edge Size	32	
Load Balancing	Load Balancer Servers per Pool - Extra Large Edge Size	32	
Load Balancing	Load Balancer Health Checks - Compact Edge Size	320	
Load Balancing	Load Balancer Health Checks - Large Edge Size	320	
Load Balancing	Load Balancer Health Checks - Quad Large Edge Size	320	
Load Balancing	Load Balancer Health Checks - Extra Large Edge Size	3072	
Load Balancing	Load Balancer Application Rule Size in Characters	4096	Applies to all Edge sizes.
VPN : Layer 2 VPN			
The NSX for vSphere Edge Service Gateway provides a layer 2 VPN service.			
Layer 2 VPN	L2VPN Clients (spoke) Handled by a Single L2VPN Server (hub)	5	
Layer 2 VPN	Networks per L2VPN Client-Server Pair	200	
VPN : IPsec VPN			
The NSX for vSphere Edge Service Gateway provides a IPsec VPN service.			
IPsec VPN	IPsec Tunnels per Edge Service Gateway - Compact Edge Size	512	
IPsec VPN	IPsec Tunnels per Edge Service Gateway - Large Edge Size	1600	
IPsec VPN	IPsec Tunnels per Edge Service Gateway - Quad Large Edge Size	4096	
IPsec VPN	IPsec Tunnels per Edge Service Gateway - Extra Large Edge Size	6000	
VPN : SSL VPN			
The NSX for vSphere Edge Service Gateway provides a SSL VPN service.			
SSL VPN	Concurrent Sessions - Compact Edge Size	50	
SSL VPN	Concurrent Sessions - Large Edge Size	100	
SSL VPN	Concurrent Sessions - Quad Large Edge Size	100	
SSL VPN	Concurrent Sessions - Extra Large Edge Size	1000	
SSL VPN	Private Networks	16	Applies to all Edge sizes.

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Maximum Type	Maximum	Recommended Maximum value	Description
Firewall : Identity Firewall			
NSX for vSphere supports an identity-based firewall in which the firewall rules that protect a given workload can be changed based on the identity of the user whom is using the workload.			
Identity Firewall	Active Directory Groups	70000	
Identity Firewall	Users per Active Directory Group	250	
Identity Firewall	Users in the Active Directory Domain	100000	
Identity Firewall	Virtual Machines per NSX Manager	2500	
Identity Firewall	Groups per Individual User	200	
Identity Firewall	Security Groups Based on Active Directory	300	
Identity Firewall	Virtual Machines per Security Group	1000	
Identity Firewall	Security Policies	300	
Identity Firewall	Hosts	250	For the Identity Firewall use case.
Identity Firewall	Virtual Machines per Host	120	Note maximum VMs per host where both RDSH and VDI are in present is 30.
Identity Firewall	RDSH Sessions per Host	30	
Identity Firewall	RDSH Sessions per vCenter	1000	